A 4

SEQUENCE LISTING

<110> EPICYTE PHARMACEUTICAL, INC.
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COPY

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<151> 1998-01-09

<150> 08/782,480
<151> 1997-01-10

<160> 93

<170> PatentIn 3.0

<210> 1
<211> 137
<212> Protein
<213> Human

<220>
<221> misc-feature
<222> Synthetic polypeptide J chain

<400> 1

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1               5                  10                  15

Arg Ile Thr Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu Asp
            20                  25                  30

Ile Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg Glu
        35                  40                  45

Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Arg Pro Val Tyr His
    50                  55                  60

Leu Ser Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu Asp
65                  70                  75                  80

Asn Gln Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp Ser
                85                  90                  95
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Ala Thr Glu Thr Cys Tyr Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Ala
100 105 110

Val Val Pro Leu Val Tyr Gly Gly Glu Thr Lys Met Val Glu Thr Ala
115 120 125

Leu Thr Pro Asp Ala Cys Tyr Pro Asp
130 135

<210> 2
<211> 135
<212> Protein
<213> Mouse

<220>
<221> misc-feature
<222> Synthetic polypeptide J chain

<400> 2
Gln Asp Glu Asn Glu Arg Ile Val Val Asp Asn Lys Cys Lys Cys Ala
1 5 10 15

Arg Ile Thr Ser Arg Ile Ile Pro Ser Ala Glu Asp Pro Ser Gln Asp
20 25 30

Ile Val Glu Arg Asn Val Arg Ile Ile Val Pro Leu Asn Ser Arg Glu
35 40 45

Asn Ile Ser Asp Pro Thr Ser Pro Met Arg Thr Lys Pro Val Tyr His
50 55 60

Leu Ser Asp Leu Cys Lys Lys Cys Asp Thr Thr Glu Val Glu Leu Glu
65 70 75 80

Asp Gln Val Val Thr Ala Ser Gln Ser Asn Ile Cys Asp Ser Asp Ala
85 90 95

Glu Thr Cys Tyr Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Asn Arg Val
100 105 110

Lys Leu Ser Tyr Arg Gly Gln Thr Lys Met Val Glu Thr Ala Leu Thr
115 120 125

Pro Asp Ser Cys Tyr Pro Asp
130 135

<210> 3
<211> 137
<212> Protein
<213> Rabbit

<220>
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<222> Synthetic polypeptide J chain

<400> 3

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Asp Asp Glu Ala Thr Ile Leu Ala Asp Asn Lys Cys Met Cys Thr Arg
1               5                  10                  15

Val Thr Ser Arg Ile Ile Pro Ser Thr Glu Asp Pro Asn Glu Asp Ile
            20                  25                  30

Val Glu Arg Asn Ile Arg Ile Val Val Pro Leu Asn Asn Arg Glu Asn
        35                  40                  45

Ile Ser Asp Pro Thr Ser Pro Leu Arg Arg Asn Pro Val Tyr His Leu
    50                  55                  60

Ser Asp Val Cys Lys Lys Cys Asp Pro Val Glu Val Glu Leu Glu Asp
65                  70                  75                  80

Gln Val Val Thr Ala Thr Gln Ser Asn Ile Cys Asn Glu Asp Asp Gly
                85                  90                  95

Val Pro Glu Thr Cys Tyr Met Tyr Asp Arg Asn Lys Cys Tyr Thr Thr
            100                 105                 110

Met Val Pro Leu Arg Tyr His Gly Glu Thr Lys Met Val Gln Ala Ala
        115                 120                 125

Leu Thr Pro Asp Ser Cys Tyr Pro Asp
    130                 135
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<210> 4
<211> 136
<212> Protein
<213> Bovine

<220>
<221> misc-feature
<222> Synthetic polypeptide J chain

<400> 4

Glu Asp Glu Ser Thr Val Leu Val Asp Asn Lys Cys Gln Cys Val Arg
1 5 10 15

Ile Thr Ser Arg Ile Ile Arg Asp Pro Asp Asn Pro Ser Glu Asp Ile
20 25 30

Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Thr Arg Glu Asn
35 40 45

Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Glu Pro Lys Tyr Asn Leu
50 55 60

Ala Asn Leu Cys Lys Lys Cys Asp Pro Thr Glu Ile Glu Leu Asp Asn
65 70 75 80

Gln Val Phe Thr Ala Ser Gln Ser Asn Ile Cys Pro Asp Asp Asp Tyr
85 90 95

Ser Glu Thr Cys Tyr Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Thr Leu
100 105 110

Val Pro Ile Thr His Arg Gly Val Thr Arg Met Val Lys Ala Thr Leu
115 120 125

Thr Pro Asp Ser Cys Tyr Pro Asp
130 135

<210> 5
<211> 119
<212> Protein
<213> Bull frog

<220>
<221> misc-feature
<222> Synthetic polypeptide J chain

<400> 5

Glu	Gln	Glu	Tyr	Ile	Leu	Ala	Asn	Asn	Lys	Cys	Lys	Cys	Val	Lys	Ile
1				5					10						15	
Ser	Ser	Arg	Phe	Val	Pro	Ser	Thr	Glu	Arg	Pro	Gly	Glu	Glu	Ile	Leu
			20					25					30		
Glu	Arg	Asn	Ile	Gln	Ile	Thr	Ile	Pro	Thr	Ser	Ser	Arg	Met	Xaa	Ile
		35					40					45			
Ser	Asp	Pro	Tyr	Ser	Pro	Leu	Arg	Thr	Gln	Pro	Val	Tyr	Asn	Leu	Trp
	50					55					60				
Asp	Ile	Cys	Gln	Lys	Cys	Asp	Pro	Val	Gln	Leu	Glu	Ile	Gly	Gly	Ile
65					70					75					80
Pro	Val	Leu	Ala	Ser	Gln	Pro	Xaa	Xaa	Ser	Xaa	Pro	Asp	Asp	Glu	Cys
				85					90					95	
Tyr	Thr	Thr	Glu	Val	Asn	Phe	Lys	Lys	Lys	Val	Pro	Leu	Thr	Pro	Asp
			100					105					110		
Ser	Cys	Tyr	Glu	Tyr	Ser	Glu									
		115													

<210> 6
<211> 129
<212> Protein
<213> Earthworm

<220>
<221> misc-feature
<222> Synthetic polypeptide J chain

<400> 6

Asn	Lys	Cys	Met	Cys	Thr	Arg	Val	Thr	Ala	Arg	Ile	Arg	Gly	Thr	Arg
1				5					10						15	
Glu	Asp	Pro	Asn	Glu	Asp	Ile	Val	Glu	Arg	Tyr	Ile	Arg	Ile	Asn	Val
			20					25					30		
Pro	Leu	Lys	Asn	Arg	Gly	Asn	Ile	Ser	Asp	Pro	Thr	Ser	Pro	Leu	Arg
		35					40					45			

Asn Gln Pro Val Tyr His Leu Ser Pro Ser Cys Lys Lys Cys Asp Pro
50 55 60

Tyr Glu Asp Gly Val Val Thr Ala Thr Glu Thr Asn Ile Cys Tyr Pro
65 70 75 80

Asp Gln Gly Val Pro Gln Ser Cys Arg Asp Tyr Cys Pro Glu Leu Asp
85 90 95

Arg Asn Lys Cys Tyr Thr Val Leu Val Pro Pro Gly Tyr Thr Gly Glu
100 105 110

Thr Lys Met Val Gln Asn Ala Leu Thr Pro Asp Ala Cys Tyr Pro Asp
115 120 125

<210> 7
<211> 421
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<222> (1)..(414)

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide including target of "full length" TM cDNA

<400> 7
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Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys Cys Lys Cys
1 5 10 15

GCT CGT ATT ACT TCT AGA ATC ATC CGT AGC TCA GAG GAC CCA AAT GAA 96
Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu
20 25 30

GAT ATA GTC GAA CGT AAC ATC CGT ATC ATC GTC CCA CTG AAT AAC CGG 144
Asp Ile Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg
35 40 45

GAG AAT ATC TCA GAT CCT ACA AGT CCG TTG CGC ACA CGC TTC GTA TAC 192
Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Arg Phe Val Tyr
50 55 60

CAC CTG TCA GAT CTG TGT AAG AAG TGT GAT CCA ACA GAG GTA GAG CTG 240
His Leu Ser Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu
65 70 75 80

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GAC AAT CAG ATA GTC ACT GCG ACT CAA AGC AAC ATT TGC GAT GAG GAC       288
Asp Asn Gln Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp
                85                  90                  95

AGC GCT ACA GAA ACC TGC AGC ACC TAC GAT AGG AAC AAA TGC TAC ACG       336
Ser Ala Thr Glu Thr Cys Ser Thr Tyr Asp Arg Asn Lys Cys Tyr Thr
            100                 105                 110

GCC GTG GTT CCG CTC GTG TAT GGT GGA GAG ACA AAA ATG GTG GAA ACT       384
Ala Val Val Pro Leu Val Tyr Gly Gly Glu Thr Lys Met Val Glu Thr
        115                 120                 125

GCC CTT ACG CCC GAT GCA TGC TAT CCG GAC TGAATTC                       421
Ala Leu Thr Pro Asp Ala Cys Tyr Pro Asp
    130                 135


<210>  8
<211>  215
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  CDS
<222>  (1)..(213)

<220>
<221>  misc-feature
<222>  Description of Artificial Sequence: Nucleotide sequence of Core TM
cDNA

<400>  8
GAT CAG AAG TGC AAG TGT GCT CGT ATT ACT TCT AGA ATC ATC CGT AGC        48
Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
  1               5                  10                  15

TCA GAG GAC CCA AAT GAA GAT ATA GTC GAA CGT AAC ATC CGT ATC ATC        96
Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
            20                  25                  30

GTC CCA CTG AAT AAC CGG GAG AAT ATC TCA GAT CCT ACA AGT CCG TTG       144
Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
        35                  40                  45

CGC ACA CGC TTC GTA TAC CAC CTG TCA GAT CTG TGT AAG AAG GAT GAG       192
Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Asp Glu
    50                  55                  60

GAC AGC GCT ACA GAA ACC TGC TG                                       215
Asp Ser Ala Thr Glu Thr Cys
65                  70
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<210> 9
<211> 140
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Nucleotide sequence of C2 fragment

<400> 9
CTAGAATCAT CCGTAGCTCA GAGGACCCAA ATGAAGATAT AGTCGAACGT AACATCCGTA 60

TCATCGTCCC ACTGAATAAC CGGGAGAATA TCTCAGATCC TACAAGTCCG TTGCGCACAC 120

GCTTCGTATA CCACCTGTCA 140

<210> 10
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Nucleotide sequence of D1.1 fragment

<400> 10
GATCAGAAGT GCAAGTGTGC TCGTATTACT T 31

<210> 11
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<222> (1)..(42)

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Nucleotide sequence of L3D fragment

<400> 11
GAT CTG TGT AAG AAG GAT GAA GAT TCC GCT ACA GAA ACC TGC 42
Asp Leu Cys Lys Lys Asp Glu Asp Ser Ala Thr Glu Thr Cys
75 80 85

TG 44

<210> 12
<211> 109
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Nucleotide sequence of T4 fragment

<400> 12
GCACCTACGA TAGGAACAAA TGCTACACGG CCGTGGTTCC GCTCGTGTAT GGTGGAGAGA 60

CAAAAATGGT GGAAACTGCC CTTACGCCCG ATGCATGCTA CCCTGACTG 109

<210> 13
<211> 286
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<222> (1)..(282)

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Nucleotide sequence of Core TM cDNA using L3

<400> 13
GAC AAC AAG TGC AAG TGT GCT CGT ATT ACT TCT AGA ATC ATC CGT AGC 48
Asp Asn Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
15 20 25 30

TCA GAG GAC CCA AAT GAA GAT ATA GTC GAA CGT AAC ATC CGT ATC ATC 96
Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
35 40 45

GTC CCA CTG AAT AAC CGG GAG AAT ATC TCA GAT CCT ACA AGT CCG TTG 144
Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
50 55 60

CGC ACA CGC TTC GTA TAC CAC CTG TCA GAT CTG TGT AAG AAG TGT GAT 192
Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Cys Asp
65 70 75

CCA ACA GAG GTA GAG CTG GAC AAT CAG ATA GTC ACT GCG ACT CAA AGC 240
Pro Thr Glu Val Glu Leu Asp Asn Gln Ile Val Thr Ala Thr Gln Ser
80 85 90

```
AAC ATT TGC GAT GAG GAC AGC GCT ACA GAA ACC TGC TAC TGA                282
Asn Ile Cys Asp Glu Asp Ser Ala Thr Glu Thr Cys Tyr  *
 95                  100                 105

ATTC                                                                  286


<210>  14
<211>  105
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  CDS
<222>  (1)..(105)

<220>
<221>  misc-feature
<222>  Description of Artificial Sequence: Nucleotide sequence of L3 fragment

<400>  14
GAT CTG TGT AAG AAG TGT GAT CCA ACA GAG GTA GAG CTG GAC AAT CAG        48
Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu Asp Asn Gln
 95                  100                 105                 110

ATA GTC ACT GCG ACT CAA AGC AAC ATT TGC GAT GAG GAC AGC GCT ACA        96
Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp Ser Ala Thr
                115                 120                 125

CTT TGG ACG                                                           105
Leu Trp Thr



<210>  15
<211>  61
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc-feature
<222>  Description of Artificial Sequence: Nucleotide sequence of D1 fragment

<400>  15
GATCAGGAAG ATGAACGTAT TGTTCTGGTT GACAACAAGT GCAAGTGTGC TCGTATTACT      60

T                                                                     61
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<210> 16
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Nucleotide sequence of TpS2

<400> 16
GCGATGACGA CGATAAGGCC CAAACGGAGA CCTGTACTGT TGCGCCTCGT GAACGGCAAA 60

ACTGCGGATT CCCGGAAGTA ACACCCTCTC AGTGCGCTAA TAAAGGCTGC TGTTTTGATG 120

ACACGGTACG GGGCGTTCCG TGGTGCTTCT ACCCCAATAC AATTGACGTT CCGCCTGAAG 180

AAGAGTGCGA GCCGTAAG 198

<210> 17
<211> 138
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of "full length" TM cDNA

<400> 17
Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys Cys Lys Cys
1 5 10 15

Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu
20 25 30

Asp Ile Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg
35 40 45

Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Arg Phe Val Tyr
50 55 60

His Leu Ser Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu
65 70 75 80

Asp Asn Gln Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp
85 90 95

Ser Ala Thr Glu Thr Cys Ser Thr Tyr Asp Arg Asn Lys Cys Tyr Thr
100 105 110

Ala Val Val Pro Leu Val Tyr Gly Gly Glu Thr Lys Met Val Glu Thr
115 120 125

Ala L u Thr Pro Asp Ala Cys Tyr Pro Asp
130 135

<210> 18
<211> 71
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of Core TM cDNA

<400> 18
Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
1 5 10 15

Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
20 25 30

Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
35 40 45

Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Asp Glu
50 55 60

Asp Ser Ala Thr Glu Thr Cys
65 70

<210> 19
<211> 49
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of C2 fragment

<400> 19
Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu Asp Ile Val Glu
1 5 10 15

Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg Glu Asn Ile Ser
20 25 30

Asp Pro Thr Ser Pro Leu Arg Thr Arg Phe Val Tyr His Leu Ser Asp
35 40 45

Leu

<210> 20
<211> 12
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of D 1.1 fragment

<400> 20
Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg
1 5 10

<210> 21
<211> 14
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of L3D fragment

<400> 21
Asp Leu Cys Lys Lys Asp Glu Asp Ser Ala Thr Glu Thr Cys
1 5 10

<210> 22
<211> 36
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of T4 fragment

<400> 22
Ser Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Ala Val Val Pro Leu Val
1 5 10 15

Tyr Gly Gly Glu Thr Lys Met Val Glu Thr Ala Leu Thr Pro Asp Ala
20 25 30

Cys Tyr Pro Asp
35

<210> 23
<211> 93
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of Core TM cDNA using L3

<400> 23
Asp Asn Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
1 5 10 15

Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
20 25 30

Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
35 40 45

Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Cys Asp
50 55 60

Pro Thr Glu Val Glu Leu Asp Asn Gln Ile Val Thr Ala Thr Gln Ser
65 70 75 80

Asn Ile Cys Asp Glu Asp Ser Ala Thr Glu Thr Cys Tyr
85 90

<210> 24
<211> 35
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of L3 fragment

<400> 24
Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu Asp Asn Gln
1 5 10 15

Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp Ser Ala Thr
20 25 30

Leu Trp Thr
35

<210> 25
<211> 22
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of D1 fragment

<400> 25
Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys Cys Lys Cys
1 5 10 15

Ala Arg Ile Thr Ser Arg
20

<210> 26
<211> 66
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide of TpS2

<400> 26
Cys Ser Asp Asp Asp Asp Lys Ala Gln Thr Glu Thr Cys Thr Val Ala
1 5 10 15

Pro Arg Glu Arg Gln Asn Cys Gly Phe Pro Gly Val Thr Pro Ser Gln
20 25 30

Cys Ala Asn Lys Gly Cys Cys Phe Asp Asp Thr Val Arg Gly Val Pro
35 40 45

Trp Cys Phe Tyr Pro Asn Thr Ile Asp Val Pro Pro Glu Glu Glu Cys
50 55 60

<210> 27
<211> 421
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Complementary nucleotide sequence of "full length" TM cDNA

<400> 27
CTAGTCCTTC TACTTGCATA ACAAGACCAA CTGTTGTTCA CGTTCACACG AGCATAATGA 60

AGATCTTAGT AGGCATCGAG TCTCCTGGGT TTACTTCTAT ATCAGCTTGC ATTGTAGGCA 120

TAGTAGCAGG GTGACTTATT GGCCCTCTTA TAGAGTCTAG GATGTTCAGG CAACGCGTGT 180

GCGAAGCATA TGGTGGACAG TCTAGACACA TTCTTCACAC TAGGTTGTCT CCATCTCGAC 240

CTGTTAGTCT ATCAGTGACG CTGAGTTTCG TTGTAAACGC TACTCCTGTC GCGATGTCTT 300

TGGACGTCGT GGATGCTATC CTTGTTTACG ATGTGCCGGC ACCAAGGCGA GCACATACCA 360

CCTCTCTGTT TTTACCACCT TTGACGGGAA TGCGGGCTAC GTACGATAGG CCTGACTTAA 420

G 421

<210> 28
<211> 219
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Complementary nucleotide sequence of Core TM cDNA

<400> 28
CTAGTCTTCA CGTTCACACG AGCATAATGA AGATCTTAGT AGGCATCGAG TCTCCTGGGT 60

TTACTTCTAT ATCAGCTTGC ATTGTAGGCA TAGTAGCAGG GTGACTTATT GGCCCTCTTA 120

TAGAGTCTAG GATGTTCAGG CAACGCGTGT GCGAAGCATA TGGTGGACAG TCTAGACACA 180

TTCTTCCTAC TCCTGTCGCG ATGTCTTTGG ACGACTTAA 219

<210> 29
<211> 140
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Complementary nucleotide sequence of C2 fragment

<400> 29
TTAGTAGGCA TCGAGTCTCC TGGGTTTACT TCTATATCAG CTTGCATTGT AGGCATAGTA 60

GCAGGGTGAC TTATTGGCCC TCTTATAGAG TCTAGGATGT TCAGGCAACG CGTGTGCGAA 120

GCATATGGTG GACAGTCTAG 140

<210> 30
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Complementary nucleotide sequence of D 1.1 fragment

<400> 30
TCTTCACGTT CACACGAGCA TAATGAAGAT C 31

<210> 31
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Complementary nucleotide sequence of L3D fragment

<400> 31
ACACATTCTT CCTACTTCTC AGGCGATGTC TTTGGACGAC TTAA 44

<210> 32
<211> 117
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Complementary nucleotide sequence of T4 fragment

<400> 32
ACGTCGTGGA TGCTATCCTT GTTTACGATG TGCCGGCACC AAGGCGAGCA CATACCACCT 60

CTCTGTTTTT ACCACCTTTG ACGGGAATGC GGGCTACGTA CGATGGGACT GACTTAA 117

<210> 33
<211> 282
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Complementary nucleotide sequence of Core TM cDNA using L3

<400> 33
CTGTTGTTCA CGTTCACACG AGCATAATGA AGATCTTAGT AGGCATCGAG TCTCCTGGGT 60

TTACTTCTAT ATCAGCTTGC ATTGTAGGCA TAGTAGCAGG GTGACTTATT GGCCCTCTTA 120

TAGAGTCTAG GATGTTCAGG CAACGCGTGT GCGAAGCATA TGGTGGACAG TCTAGACACA 180

TTCTTCACAC TAGGTTGTCT CCATCTCGAC CTGTTAGTCT ATCAGTGACG CTGAGTTTCG 240

TTGTAAACGC TACTCCTGTC GCGATGTCTT TGGACGATGA CT 282

<210> 34
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Complementary nucleotide sequence of L3 fragment

<400> 34
GATCTGTGTA AGAAGTGTGA TCCAACAGAG GTAGAGCTGG ACAATCAGAT AGTCACTGCG 60

ACTCAAAGCA ACATTTGCGA TGAGGACAGC GCTACACTTT GGACG 105

<210> 35
<211> 65
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Complementary nucleotide sequence of D1 fragment

<400> 35
CTAGTCCTTC TACTTGCATA ACAAGACCAA CTGTTGTTCA CGTTCACACG AGCATAATGA 60

AGATC 65

<210> 36
<211> 206
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Complementary nucleotide sequence of TpS2

<400> 36
ACTTCGCTAC TGCTGCTATT CCGGGTTTGC CTCTGGACAT GACAACGCGG AGCACTTGCC 60

GTTTTGACGC CTAAGGGCCT TCATTGTGGG AGAGTCACGC GATTATTTCC GACGACAAAA 120

CTACTGTGCC ATGCCCCGCA AGGCACCACG AAGATGGGGT TATGTTAACT GCAAGGCGGA 180

CTTCTTCTCA CGCTCGGCAT TCTTAA 206

<210> 37
<211> 13
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Domain 1, 13 amino peptide with substantial β-sheet character

<400> 37
Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys
1 5 10

<210> 38
<211> 7
<212> Protein
<213> Tobacco etch virus

<220>
<221> misc-feature
<222> Peptide recognized by the tobacco etch virus protease Nia

<400> 38
Glu Asn Leu Tyr Phe Gln Ser
1 5

<210> 39
<211> 11
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide residues from pro-cathepsin E

<400> 39
Lys Ala His Lys Val Asp Met Val Gln Tyr Thr
1 5 10

<210> 40
<211> 4
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Linker from procathepsin

<400> 40
Val Gln Tyr Thr
1

<210> 41
<211> 6
<212> Protein
<213> Human

<220>
<221> misc-feature
<222> Linker from polyimmunoglobulin receptor

<400> 41
Glu Lys Ala Val Ala Asp
1 5

<210> 42
<211> 131
<212> DNa
<213> Artificial Sequence

<220> CDS
<221> 1..78
<222> Description of Artificial Sequence: Nucleotide sequence of secretion signal from pMelBac

<400> 42
ATG AAA TTC TTA GTC AAC GTT GCC CTT TTT ATG GTC GTA TAC ATT TCT 48
Met Lys Phe Leu Val Asn Val Ala Leu Phe Met Val Val Tyr Ile Ser
40 45 50

TAC ATC TAT GCG GAT CCG AGC TCG AGT GCT CTAGATCTGC AGCTGGTACC 98
Tyr Ile Tyr Ala Asp Pro Ser Ser Ser Ala
55 60

ATGGAATTCG AAGCTTGGAG TCGACTCTGC TGA 131

<210> 43
<211> 26
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic polypeptide sequence of secretion signal from pMelBac

<400> 43
Met Lys Phe Leu Val Asn Val Ala Leu Phe Met Val Val Tyr Ile Ser
1 5 10 15

Tyr Ile Tyr Ala Asp Pro Ser Ser Ser Ala
20 25

<210> 44
<211> 4
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Endomembrane retention signal

<400> 44
Lys Asp Glu Leu
1

<210> 45
<211> 16
<212> Protein
<213> Human

<220>
<221> misc-feature
<222> Residues 585-600 of polyimmunoglobulin receptor

<400> 45
Ala Ile Gln Asp Pro Arg Leu Phe Ala Glu Glu Lys Ala Val Ala Asp
1 5 10 15

<210> 46
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 1

<400> 46
GATCAGGAAG ATGAACGTAT TGTTCTGGTT GACAACAAGT GCAAGTGTGC TCGTATTACT 60

T 61

<210> 47
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 2

<400> 47
CTAGAAGTAA TACGAGCACA CTTGCACTTG TTGTCAACCA GAACAATACG TTCATCTTCC 60

T 61

<210> 48
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 1.1

<400> 48
GATCAGAAGT GCAAGTGTGC TCGTATTACT T 31

<210> 49
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 1.2

<400> 49
CTAGAAGTAA TACGAGCACA CTTGCACTTC T 31

<210> 50
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 1.2ser

<400> 50
GATCAGGAAG ATGAACGTAT TGTTCTGGTT GACAACAAGT GCAAGTCCGC TCGTATTACT 60

T 61

<210> 51
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 2.2ser

<400> 51
CTAGAAGTAA TACGAGCGGA CTTGCACTTG TTGTCAACCA GAACAATACG TTCATCTTCC 60

T 61

<210> 52
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 1.2val

<400> 52
GATCAGGAAG ATGAACGTAT TGTTCTGGTT GACAACAAGT GCAAGGTTGC TCGTATTACT 60

T 61

<210> 53
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 2.2val

<400> 53
CTAGAAGTAA TACGAGCAAC CTTGCACTTG TTGTCAACCA GAACAATACG TTCATCTTCC 60

T 61

<210> 54
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 3

<400> 54
CTAGAATCAT CCGTAGCTCA GAGGACCCAA ATGAAGATAT AGTCGAA 47

<210> 55
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 4

<400> 55
GATACGGATG TTACGTTCGA CTATATCTTC ATTTGGGTCC TCTGAGCTAC GGATGATT 58

<210> 56
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 5

<400> 56
CGTAACATCC GTATCATCGT CCCACTGAAT AACCGGGAGA ATATCTCAG 49

<210> 57
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 5.1dg

<400> 57
CGTAACATCC GTATCATCGT CCCACTGAAT AACCGGGAGC ACATCTCAG 49

<210> 58
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 6

<400> 58
ACGGACTTGT AGGATCTGAG ATATTCTCCC GGTTATTCAG TGGGACGAT 49

<210> 59
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 6.1dg

<400> 59
ACGGACTTGT AGGATCTGAG ATGTGCTCCC GGTTATTCAG TGGGACGAT 49

<210> 60
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 7

<400> 60
ATCCTACAAG TCCGTTGCGC ACACGCTTCG TATACCACCT GTCA 44

<210> 61
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 8

<400> 61
GATCTGACAG GTGGTATACG AAGCGTGTGC GCA 33

<210> 62
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 9

<400> 62
GATCTGTGTA AGAAGTGTGA TCCAACAGAG GTAGAGCTGG ACAATCAGAT AGTCACTGCA 60

<210> 63
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 9L3Δ

<400> 63
GATCTGTGTA AGAAGGATGA GGACAGCGCT ACAGAAACCT GCTG 44

<210> 64
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 10L3Δ

<400> 64
AATTCAGCAG GTTTCTGTAG CGCTGTCCTC ATCCTTCTTA CACA 44

<210> 65
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 9L3ΔKDEL

<400> 65
GATCTGTGTA AGAAGGATGA GGACAGCGCT ACAGAAACCT GCTACGAGAA GGATGAGCTG 60

TG 62

<210> 66
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 10L3ΔKDEL

<400> 66
AATTCACAGC TCATCCTTCG CGTCGCAGGT TTCTGTAGCG CTGTCCTCAT CCTTCTTACA 60

CA 62

<210> 67
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 9.2Δ3

<400> 67
GATCTGTGTA AGAAGTCTGA TATCGATGAA GATTCCGCTA CAGAAACCTG CAGCACATG 59

<210> 68
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 10.2Δ3

<400> 68
AATTCATGTG CTGCAGGTTT CTGTAGCGGA ATCTTCATCG ATATCAGACT TCTTACACA 59

<210> 69
<211> 64
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 9.3Δ3/ser68

<400> 69

GATCTGTCTA AGAAGTCTGA TATCGATGAA GATTACAGAT TCTTCAGACT ATAGCTACTT 60

CTAA 64

<210> 70
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 10.3Δ3/ser68

<400> 70
AATCTTCATC GATATCAGAC TTCTTAGACA 30

<210> 71
<211> 64
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 9.3Δ3/val68

<400> 71
GATCTGGTTA AGAAGTCTGA TATCGATGAA GATTACCAAT TCTTCAGACT ATAGCTACTT 60

CTAA 64

<210> 72
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 10.3Δ3/val68

<400> 72
AATCTTCATC GATATCAGAC TTCTTAACCA 30

<210> 73
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 10

<400> 73
ATTGTCCAGC TCTACCTCTG TTGGATCACA CTTCTTACAC A 41

<210> 74
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 11

<400> 74
ACTCAAAGCA ACATTTGCGA TGAGGACAGC GCTACAGAAA CCTGCA 46

<210> 75
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 12

<400> 75
GGTTTCTGTA GCGCTCTGCT CATCGCAAAT GTTGCTTTGA GTCGCAGTGA CTATCTG 57

<210> 76
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 13

<400> 76
GCACCTACGA TAGGAACAAA TGCTACACGG CCGTGGTTCC GCTCGTGTAT GGTGGAGAG 59

<210> 77
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 14

<400> 77
GAGCGGAACC ACGGCCGTGT AGCATTTGTT CCTATCGTAG GTGCTGCA 48

<210> 78
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 15

<400> 78
ACAAAAATGG TGGAAACTGC CCTTACGCCC GATGCATGCT ATCCGGACTG 50

<210> 79
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 16

<400> 79
AATTCAGTCC GGATAGCATG CATCGGGCGT AAGGGCAGTT TCCACCATTT TTGTCTCTCC 60

ACCATACAC 69

<210> 80
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 15KDEL

<400> 80
ACAAAAATGG TGGAAACTGC CCTTACGCCC GATGCATGCT ATCCGGACAA GGATGAATTG 60

TG 62

<210> 81
<211> 81
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide 16KDEL

<400> 81
AATTCACAAT TCATCCTTGT CCGGATAGCA TGCATCGGGC GTAAGGGCAG TTTCCACCAT 60

TTTTGTCTCT CCACCATACA C 81

<210> 82
<211> 88
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide P1

<400> 82
GATCAGGTCG CTGCCATCCA AGACCCGAGG CTGTTCGCCG AAGAGAAGGC CGTCGCTGAC 60

TCCAAGTGCA AGTGTGCTCG TATTACTT 88

<210> 83
<211> 88
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide P2

<400> 83
CTAGAAGTAA TACGAGCACA CTTGCACTTG GAGTCAGCGA CGGCCTTCTC TTCGGCGAAC 60

AGCCTCGGGT CTTGGATGGC AGCGACCT 88

<210> 84
<211> 10
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Nuclear targeting sequence 1

<400> 84
Cys Ala Ala Pro Lys Lys Lys Arg Lys Val
1 5 10

<210> 85
<211> 22
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Nuclear targeting sequence 2

<400> 85
Cys Ala Ala Lys Arg Pro Pro Ala Ala Ile Lys Lys Ala Ala Ala Gly
1 5 10 15

Gln Ala Lys Lys Lys Lys
20

<210> 86
<211> 4
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: HDEL linker sequence for intracellular targeting

<400> 86
His Asp Glu Leu
1

<210> 87
<211> 77
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide Tp1

<400> 87
GCGATGACGA CGATAAGGCC CAAACGGAGA CCTGTACTGT TGCGCCTCGT GAACGGCAAA 60

ACTGCGGATT CCCGGAA 77

<210> 88
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide Tp2

<400> 88

GTTTTGCCGT TCACGAGGCG CAACAGTACA GGTCTCCGTT TGGGCCTTAT CGTCGTCATC 60

GCTTCA 66

<210> 89
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide Tp3

<400> 89
GTAACACCCT CTCAGTGCGC TAATAAAGGC TGCTGTTTTG ATGACACGGT ACGGGGCGTT 60

CCGTGGTGCT TC 72

<210> 90
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide Tp4

<400> 90
GCCCCGTACC GTGTCATCAA AACAGCAGCC TTTATTAGCG CACTGAGAGG GTGTTACTTC 60

CGGGAATCCG CA 72

<210> 91
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide Tp5

<400> 91
TACCCCAATA CAATTGACGT TCCGCCTGAA GAAGAGTGCG AGCCGTAAG 49

<210> 92
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Oligonucleotide Tp6

<400> 92
AATTCTTACG GCTCGCACTC TTCTTCAGGC GGCAAGTCAA TTGTATTGGG GTAGAAGCAC 60

CACGGAAC 68

<210> 93
<211> 13
<212> Protein
<213> Artificial Sequence

<220>
<221> misc-feature
<222> Description of Artificial Sequence: Synthetic peptide linker

<400> 93
Val Ala Val Gln Ser Ala Gly Thr Pro Ala Ser Gly Ser
1 5 10